

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application.

COMPLETE LISTING OF THE CLAIMS:

Claims 1-42 : (Canceled)

Claim 43 : (New) An optical communication system, comprising:

a) a first optical path for guiding information-bearing, first optical radiation partitioned into a plurality of wavebands;

b) a second optical path for guiding information-bearing, second optical radiation partitioned into the same plurality of wavebands; and

c) interfacing means for selectively communicating at least one component of the first radiation corresponding to at least one selected waveband from the first path to the second path, the interfacing means including

i) waveband selective diverting means in the first path, for selecting and diverting said at least one component of the first radiation corresponding to said at least one selected waveband from the first path to an entry point in the second path for guidance away from the entry point along the second path, and

ii) waveband selective attenuating means upstream of the entry point in the second path, for selecting and blocking said at least one component corresponding to said at least one selected waveband from the second radiation.

Claim 44 : (New) The system of claim 43, wherein the interfacing means includes waveband selective coupling means for selecting and coupling at least one component from the first radiation diverted by the diverting means to the entry point.

Claim 45 : (New) The system of claim 43, wherein the diverting means includes waveband selective filtering means for spatially separating components of the first radiation; and liquid crystal attenuating means associated with each component of the first radiation for selectively transmitting or diverting said at least one component of the first radiation corresponding to said at least one selected waveband.

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Claim 46 : (New) The system of claim 44, wherein the coupling means includes waveband selective filtering means for spatially separating components of the first radiation; and liquid crystal attenuating means associated with each component of the first radiation for selectively transmitting or diverting said at least one component of the first radiation corresponding to said at least one selected waveband to the entry point.

Claim 47 : (New) The system of claim 44, wherein the attenuating means includes waveband selective filtering means for spatially separating components of the second radiation; and liquid crystal attenuating means associated with each component of the second radiation for selectively transmitting or diverting the components of the second radiation relative to the second path.

Claim 48 : (New) The system of claim 44, wherein the diverting means, the attenuating means and the coupling means operate on the optical radiation in the optical domain.

Claim 49 : (New) The system of claim 44, wherein the coupling means includes waveband switching means for transferring information conveyed on a first set of

components of the radiation diverted by the diverting means to a second set of components for guidance along the second path, the first set and the second set having different wavebands.

Claim 50 : (New) The system of claim 49, wherein the switching means includes waveband selecting means for isolating a component of a selected waveband in the first radiation diverted from the first path, detecting means for converting the isolated component into an electrical signal, and an optical radiation source modulated by the signal for generating radiation bearing the signal at a waveband different from the selected waveband for guidance along the second path.

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Claim 51 : (New) The system of claim 49, wherein the switching means includes waveband selecting means for isolating a component of a selected waveband in the first radiation diverted from the first path, and an optical radiation source biased substantially at its lasing threshold and stimulated by the isolated component, for generating a stimulated component modulated by information carried by the isolated component at a waveband different from the selected waveband for guidance along the second path.

Claim 52 : (New) The system of claim 44, wherein the coupling means includes regenerating means for regenerating the radiation guided therethrough.

Claim 53 : (New) The system of claim 43, wherein each path is operative for bidirectionally guiding the respective radiation therealong, and wherein the interfacing means is operative for communicating said at least one component guided in either direction of the first path for guidance along either direction of the second path.

Claim 54 : (New) The system of claim 43, wherein each path includes a plurality of subpaths.

Claim 55 : (New) The system of claim 43, wherein each path is operative for bidirectionally guiding the respective radiation therealong, and wherein the interfacing means is operative for communicating said at least one component guided in one direction of the first path for guidance along an opposite direction of the second path.

Claim 56 : (New) An interface for an optical communication system having a first optical path for guiding information-bearing, first optical radiation partitioned into a plurality of wavebands, and a second optical path for guiding information-bearing, second optical radiation partitioned into the same plurality of wavebands, the interface being operative for selectively communicating at least one component of the first radiation corresponding to at least one selected waveband from the first path to the second path, the interface comprising:

a) waveband selective diverting means in the first path, for selecting and diverting said at least one component of the first radiation corresponding to said at least one selected waveband from the first path to an entry point in the second path for guidance away from the entry point along the second path, and

b) waveband selective attenuating means upstream of the entry point in the second path, for selecting and blocking said at least one component corresponding to said at least one selected waveband from the second radiation.

Claim 57 : (New) The interface of claim 56, and further comprising waveband selective coupling means for selecting and coupling at least one component from the first radiation diverted by the diverting means to the entry point.

Claim 58 : (New) The interface of claim 56, wherein the diverting means includes waveband selective filtering means for spatially separating components of the first

radiation; and liquid crystal attenuating means associated with each component of the first radiation for selectively transmitting or diverting said at least one component of the first radiation corresponding to said at least one selected waveband.

Claim 59 : (New) The interface of claim 57, wherein the coupling means includes waveband selective filtering means for spatially separating components of the first radiation; and liquid crystal attenuating means associated with each component of the first radiation for selectively transmitting or diverting said at least one component of the first radiation corresponding to said at least one selected waveband to the entry point.

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Claim 60 : (New) The interface of claim 57, wherein the attenuating means includes waveband selective filtering means for spatially separating components of the second radiation; and liquid crystal attenuating means associated with each component of the second radiation for selectively transmitting or diverting the components of the second radiation relative to the second path.

Claim 61 : (New) The interface of claim 57, wherein the diverting means, the attenuating means and the coupling means operate on the optical radiation in the optical domain.

Claim 62 : (New) The interface of claim 57, wherein the coupling means includes waveband switching means for transferring information conveyed on a first set of components of the radiation diverted by the diverting means to a second set of components for guidance along the second path, the first set and the second set having different wavebands.

Claim 63 : (New) The interface of claim 62, wherein the switching means includes waveband selecting means for isolating a component of a selected waveband in the first radiation diverted from the first path, detecting means for converting the isolated component into

Claim 64 : (New) The interface of claim 62, wherein the switching means band selecting means for isolating a component of a selected waveband in the first path, and an optical radiation source biased substantially at its lasing wavelength, the optical radiation source being optically coupled to the first path, and stimulated by the isolated component, for generating a stimulated component of the selected waveband, the stimulated component being optically coupled to the second path, the information carried by the isolated component at a waveband different from the selected waveband being optically coupled to the second path, the second path being a waveband for guidance along the second path.

Claim 65 : (New) The interface of claim 57, wherein the coupling means
 erating means for regenerating the radiation guided therethrough.

Claim 66 : (New) The interface of claim 56, wherein each path is bidirectionally guiding the respective radiation therealong, and wherein the interface is communicating said at least one component guided in either direction of the first path along either direction of the second path.

Claim 67 : (New) The interface of claim 56, wherein each path includes subpaths.

Claim 68 : (New) The interface of claim 56, wherein each path is bidirectionally guiding the respective radiation therealong, and wherein the interface is configured for communicating said at least one component guided in one direction of the first path along an opposite direction of the second path.